533. Fuirena coerulescens Steud. Native of Africa, Natal, Cape. Virginia: Newport News, on chrome ore piles, in wet areas. Aug. 7, 1959. Reed 44066 (dupl. in ANSP). Stems 20-40 cm. high, 3-angled; leaves glabrous; spikelets few to several, in a cluster; bracts and awns very shortly hairy or rough; perianth of 3 swollen scales, awn-tipped, alternating with 3 bristles, occasionally reduced or wanting; fruit net-veined, brown.

534. Fimbristylis autumnalis (L.) R. & S. Virginia: Newport News, on chrome ore piles. Aug. 7, 1959. Reed 44050.

535. Fimbristylis baldwiniana (Schultes) Torr. Virginia: Newport News, on iron ore piles. Nov. 15, 1959. Reed 45861.

536. Rhynchospora inexpansa (Michx.) Vahl. Coastal Plain, Florida to eastern Texas, north to southeastern Virginia and Arkansas. Virginia: Newport News, on chrome ore piles. Nov. 15, 1959. Reed 45895.

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MATERIALS TOWARD A MONOGRAPH OF THE GENUS VERBENA. XXI

Harold N. Moldenke

VERBENA PERUVIANA (L.) Britton

Certain phrases in Linnaeus' original description point to V. incisa Hook., and it may well be that if/when his original specimen is examined it may reveal that the epithet "peruviana" actually belongs to what is now passing as V. incisa, while our present plant resumes its name of V. chamaedryfolia. Feuillée's description is as follows: "La racine de cette espece a environ deux pouces de longueur, sur trois lignes de largeur, elle se divise dès de colet en deux bras chargés de quelques fibres. La tige s'éleve jusques à neuf pouces, elle est épaisse environ de deux lignes, droite, parsemée d'un petit velu blanchâtre, qui rend sa couleur d'un verd blanchâtre. Les feüilles naissent deux à deux, opposées le long de la tige, elles ont quinze lignes de longueur, sur cinq lignes de largeur, terminées en pointes, dentelées dans leur contour, traversées dans leur longueur d'une côte arrondie au-dessous & sillonée au-dessus; cette côte donne de chaque côte des nervûres, qui s'étendent jusques à l'angle rentrant de la dentelure du contour des feüilles. Ces nervûres sont subdivisées en plusieurs autres plus petites, qui s'étendent sur le plan des feüilles, qui est parsemé d'nn petit velu blanc, ce qui represente les feüilles d'un verd blanchâtre. Les fleurs qui forment un bouquet à l'extrêmité de la tige, sont des rosettes d'un beau rouge de sang, à quatre quartiers, chacun desquels a un angle rentrant dans le milieu de sa partie superieure; au centre de cette rosette, il y a un tróu par où cette fleur reçoit le pis-

tile, qui s'éleve du milieu d'un calice long de six lignes, sur une ligne d'épaisseur découpé en quatre parties, verd-blanchâtre, du centre duquel part quatre étamines blanches à sommets jaunes; lorsque la fleur est passée, ce pistile devient un fruit un peu oblong, qui renferme plusieurs petites graines." Jussieu (1806) based his V. chamaedryfolia on Erinus peruvianus L., so the type of his name is the same Feuillée specimen, and is not Commerson 71 and s.n. as indicated by Macbride. It is interesting to note that Linnaeus later (1781) suggests that Erinus peruvianus may be a variety of what he calls Verbena aubletia [now known as V. canadensis (L.) Britton].

Verbena melindroides Cham. was based on collections made by Friedrich Sellow somewhere in Brazil, originally deposited in the herbarium of the Botanisches Museum at Berlin, now destroyed, but represented by Macbride's photographs 17407 & 34352. Chamisso says: "Ad fretum Stae. Catharinae Brasiliae legimus ipsi, e Brasilia calidiori pluribus locis lectam misit Sellowius. Cognata Verbenae chamaedryfoliae species, a qua simillima, foliorum forma et uberiori hirsutie, nullius fere momenti notis, at constanter differt. Maxima in hoc specierum distinguendarum fides quod illa exsiccata pallidum laete viridem servat colorem, nostra contra obscuriori griseo-subnigrescente colore lugere videtur." For what he regards as V. chamaedryfolia he cites only "'Pavon-cufre, campo', pluribus locis copiose lectam e Brasilia austral. misit Sellowius."

Verbena chamaedryfolia f. camporum was based on a collection made by Cornelius Osten (no. 3187) between Rapan and Mercedes, in the department of Soriano, Uruguay, on October 8, 1895, and is deposited in the herbarium of the Museo de Historia Natural at Montevideo.

Schauer (1847) says of this plant: "Planta floribus magnis splendide scarlatinis, hortorum europaeorum nunc vulgare tamen eximium decus. Praeter stirpem primitivam autem coluntur permultae hybridae ex ea et affinibus arte prognatae, eleganti colorum et foliorum varietate excellentes." He distinguishes (1851) his two wild varieties as follows and cites a number of specimens: *α* melindres — "foliis oblongis vel oblongo-lanceolatis inaequaliter inciso-serratis minus hirtis. -- Haec gracilior est et siccata optime jam annotante Chamissone, colorem pallidum laete viridem conservat." He cites Sellow s.n. [ad Pavon-cufré aliisque locis, campis Brasiliae meridionalis] from Brazil; Sellow s.n., Bacle s.n., Arsene s.n., and Isabelle s.n. from Uruguay; and Feuillée s.n. from Peru. melindroides — "foliis ovatis subaequaliter v. duplicato-serrato-crenatis magisque hirtis." He cites Chamisso s.n. [ad fretum S. Catharinae], Raben s.n. [loco non indicato in Brasiliae prov. Sebastianopilitana (culta?)]; Riedel s.n. [ad Baroso de Toledo, S. Pauli], and Lund s.n. [in humidis prope Taubaté, S. Pauli].

Hoffmannsegg (1842) says of his V. chamaedryoides that it dif-

fers only in its leaves being generally somewhat more numerous and with less deep teeth. He states that some workers have called it "var. latifolia", but on no valid basis, for its leaves do not differ in size at all from those of V. chamaedryfolia A. L. Juss.

In this connection Briquet's discussion (1904) is worth repeating: "Nous saisissons cette occasion pour donner quelques notes sure une espèce critique, fréquemment confondue avec le V. megapotamica, le V. chamaedrifolia Juss.

"V. chamaedrifolia Juss. in Ann. du Mus. VII, 73 (ann. 1806); Cham. in Linnaea VII, 270; Schauer in DC. Prodr. XI, 537 = Erinus peruvianus Linn. Sp. pl. ed. 1, 630 (ann. 1753) = V. veronicaefolia Sm. in Rees Cycl. XXXVI, n. 28 (ann. 1802—1820) = V. Melindres Gill. in Lindl. Bot. Reg., tab. 1184 (ann. 1828) = V. melissoides Sweet Brit. fl. gard., ser. 2, I, tab. 9 (ann. 1831) = V. peruviana O. Kuntze Rev. gen. pl. III 2, 257 (ann. 1898); non Britt. (ann. 1892).

"Le V. chamaedrifolia Juss. a déja été indiqué trois fois au Paraguay, par M. Britton (in Morong et Britton Enum. pl. coll. in Paraguay, p. 197), par M. O. Kuntze (op. cit.) et par M. Chodat (in Bull. Herb. Boiss., ser. 2, II, 818). Les indications de M. Britton et de M. Chodat sont dues à des erreurs de détermination. Quant à M. O. Kuntze, il signale notre espèce dans le sud de Paraguay sous une variété subbipinnatisecta O. Kuntze, qui ne peut être exactment identifiée d'après la diagnose rudimentaire et tout à fait insuffisante donnée par l'auteur ('Folia subbipinnatisecta'). Nous avons cependant de bonnes raisons de croire, d'après les abondants matériaux que nous avons vus du Paraguay, que cette plante d'appartient pas au V. chamaedrifolia, car nous ne connaissons de visu le V. chamaedrifolia que de l'Uruguay et de l'Argentine.

"M. O. Kuntze a cru devoir reprendre (op. cit.) le nom spécifique linnéen peruvianus et appeler cette espèce Verbena peruviana en citant cette combinaison sous l'autorité de M. Britton. Cette nomenclature est doublement erronée et son rejet exige quelques explications.

"Linné (Sp. pl. ed. 1, 630, ann. 1753) a basé son Erinus peruvianus sur une plante de Feuillée (Journ. des observ. phys. etc., III, p. 36, fig. 25, No. 3, ann. 1725) qui est incontestablement le V. chamaedrifolia Juss. Mais il lui donne comme patrie de Perou (!) alors que Feuillée dit textuellement: 'Je trouve cette plante dans les campagnes qui sont sur le bord septentrional de la rivière de la Plata, dans le Paraguay'* [*c'est-a-dire dans le nord de l'Argentine, sinon dans le Paraguay] actuel. Le chamaedrifolia est totalement étranger à la flore du Perou. Le nom spécifique peruvianus implique donc une grossière erreur géographique et ne peut être conservé aux termes des Lois de la nomenclature (art. 60, 3°). Par surcroît, le Verbena peruviana Britton n'est pas l'Erinus peruvianus L. (Verb. chamaedrifolia Juss.). La plante

signalée sous ce nom par M. Britton (Morong, Pl. Parag. exsicc. n. 51) est une forme de V. megapotamica Spreng. v. truncatula Briq. On conservera donc, pour ces deux raisons, au V. chamaedrifolia sa désignation traditionelle.

"Le V. chamaedrifolia Juss. se distingue facilement du V. megapotamica Spreng. par son port réduit, des feuilles subsessiles, son calice au moins d'un tiers plus court et sa corolle plus petite. Nous serions disposé, dans l'état actuel de nos connaissances à envisager le V. melindroides Cham. (in Linnaea VII, 270, ann. 1832) comme une espèce distincte, plutot que comme une variété du V. chamaedrifolia, ainsi que l'a fait Schauer (in DC. Prodr. XI, 537). Ce V. melindroides est une plante à aire un peu differentes (états bresiliens de Rio Grande do Sul, Saint-Paul et Sainte-Catherine) qui doit être étudiée sur des matériaux spontanés, plus abondants que ceux dont nous disposons. Il importe, en particulier, pour juger de la valeur de ces espèces de ne pas se baser sur les plantes cultivées chez lesquelles l'hybridité a produit une foule de formes de filation douteuse."

Herter (1928) is probably quite correct in identifying Larrañaga's V. sanguinea with V. peruviana. Morong, Britton, & Vail (1892) say of V. peruviana: "This scarlet-flowered, trailing Verbena seems to grow all over Paraguay, and nearly all the year round. I found it not only in copses about Asuncion, but also in the streets of the city, and far up on the Pilcomayo River. It was equally common a hundred miles east of Asuncion. The stems sometimes climb up among bushes for 6 dm." As indicated already by Briquet, this description seems to apply mostly to V. incisa Hook., which is the common Paraguayan species with red flowers and often climbing stems. Of the two collections cited by Morong, Britton, & Vail, Balansa 1024 proves to be V. megapotamica Spreng., while Morong 51 is V. incisa Hook.

The plant is said to have been introduced into cultivation in 1827; it is known from cultivation in Nürnberg in 1831, from England in 1828, from France in 1832, from Belgium in 1833, and from Switzerland in 1834. Parodi reports it cultivated in Argentina in 1934 and Troncoso in 1937, while Questel found it in gardens on St. Bartholomew in 1941. It is often recommended for rock-gardens, but is tender. Plants offered in the horticultural trade as var. melindres have oblong to oblong-lanceolate unequially incised-serrate leaves and are less hairy (illustrated in Bot. Mag. 14: pl. 1184 and Lodd., Bot. Cab. 16: pl. 1514); var. melindroides has ovate double crenate-serrate more densely hairy leaves; and the strain called V. chamaedryoides has somewhat more numerous and more shallow teeth; var. glabriuscula has almost smooth leaves; and f. rosea has pink corollas. In the Florists Exchange (1937) among notes on the New York Botanical Garden we read "especially showy is Verbena peruviana. Although not hardy it still has to be proved that there is any other plant which bears such a profusion of flowers of so blazing a red shade. The color defies descrip-

tion. Low growing and spreading rapidly this might well be termed a million dollar plant for rock gardens and since it needs greenhouse propagation there is no fear of its becoming a peddler's plant. It spreads rapidly and blooms continuously." In the New York Times (1939) it is described as "The brightest red verbenas known to botanists, which the New York Botanical Garden first introduced into this country a few years ago, make brilliant spots of color in her rock gardens." Mattoon (1958) states that it is offered to the horticultural trade by Louis Lens, Vander Vis, Winkfield Manor Nurseries, Barrington Greenhouses (Barrington, N. J.), John Forbes (Hawick), and Hillier & Sons (Winchester).

Cabrera (1945) describes it as "Hierba perenne, con tallos rastreros y hojas lanceoladas, aserradas. Flores de color carmín intenso, dispuestas en espigas terminales cortas. Común en la América cálida y templado-cálida. En el partido de Pellegrini es frecuente en la estepa climax, destacándose entre los pastos por sus flores de color sangre." Rosengurtt (1943) says of it "Estolonífera de floración muy dilatada, pero más intensa de octubre a noviembre; la semilla madura por enero. Habita praderas muy variables, prefiriendo las de tapiz bajo y ralo, donde llega a ser abundante. Es una planta inútil, pero de las más decorativas que pueblan los pastoreos." In his 1946 publication he says "Mala hierba perenne, estolonífera achatada contra el suelo, de ciclo indefinido. Abunda en campos vírgenes y rastrojos, interviniendo en las estructuras degeneradas como accesoria." Martinez Crovetto & Piccinini (1951) describe the plant as "Hemicriptófita con ramas rastreras y flores rojas, común en praderas en el nordeste del país. Florece en verano." Safford says of it in Uruguay "forming large patches of scarlet in fields". Everett (1960) says "One of the most brilliant of all garden flowers is the scarlet Verbena peruviana. It is winter hardy in mild climates and is very suitable for growing in rock gardens....In effect this kind is like a smaller edition of the regular garden Verbenas. It may be rooted from cuttings and should be wintered in a greenhouse or cold frame that is protected from severe frost where winters are harsh. It may be used in drifts in flower borders and as a permanent ground cover in places where winters are decidedly mild."

Walpers (1845) classifies this species in his Section Verbenaca, Subsection Inermes, Group Foliosae, Subgroup Macranthae, and Secondary Subgroup Melindres, with nine other species. He includes in its synonymy a Verbena montevidensis Spreng. "in Herb. Reg. Berol., vix Syst. Veg. 2. 747", but he keeps V. melindroides Cham. as a distinct species. The relative length of the pistil to the size of the pollen-grains is discussed by Covas & Schnack (1945), while Schnack & Covas (1945) produced tetraploid plants through treatment with colchicine. They comment that "Esta es el primer caso de poliploidía producida esperimentalmente en el género Glandularia. La obtención de poliploides dentro de este género reviste interés desde los puntos de vista práctico y teórico. El aumento del tamaño de las flores es un ob-

jetivo interesante desde el punto de vista fitotécnico. La transformación de un híbrido estéril en un anfidiploide fértil reviste interés práctico desde que nos permitirá mediante hibridación continuar la combinación de caracteres interesantes de varias especies distintas. Por otra parte es posible obtenar sintéticamente especies nuevas mediante ese proceso, y esto será particularmente cierto dentro del género Glandularia, que posee un número relativamente elevado de especies que pueden cruzarse entre sí. Ultimamente hemos localizado un híbrido natural originado con toda probabilidad por hibridación entre G. glutinosa y G. megapotamica. El hecho de tenerlas juntas en nuestra colección ha permitido la hibridación de estas dos especies, cuya distancia más cercana entre sus áreas de dispersión dentro de nuestro país es cuando menos de 800 km; difieren ampliamente desde el punto de vista de su afinidad sistemática parecerían pertenecer a grupos extremos dentro de las especies diploides del género. Considerando que en conjunto existen por lo menos 20 especies con 5 pares de cromosomas en Glandularia, puede tenerse una idea de las posibilidades teóricas y prácticas de la poliploidía experimental dentro de esto género."

Common names recorded for this plant include "brennende Liebe", "camaradinha", "feuer Verbene", "Feuerverbene", "flame verbena", "garden verbena", "margarita", "margarita colorada", "margarita del campo", "margarita punzó", "margarita punzo", "melindre", "roode verbena", "sangre de Cristo", "sangre del Señor", "scarlet-flowered verbena", "scarlet-flowered vervain", "scarlet verbenen", "scarlet vervain", "scharlachrothe Verbena", "speedwell-leaved vervain", "verbena", "verbena melindre", "verbena roja", "verbenas", and "veronica-leaved verbena". The name "sangre de Cristo" is also applied to V. bonariensis L. and V. litoralis H.B.K. according to Alvarez (1919). The species is offered as "Peruvian Flame" Verbena by Barrington Greenhouses, Barrington, New Jersey.

The species has been found along roadsides, in campos and dry sandy campos, grassy fields and grassy places, pasture fields, pampas and stony places, fields and dry rocky pastures, rocky hills and grassy plains, sandy places, limestone country, and dry meadows, on riverbanks, in barren ground at the edge of streamlets, in high-plain grasslands, on barren hilltops with flat outcrops, and in dry and sunny sandy soil on river shores, usually exposed to the full sun, at altitudes of 15 to 6600 feet, blooming in every month of the year, fruiting in March. Rambo calls it frequent in grassy fields at Frolo and frequent about São Leopoldo, but very rare about Porto Alegre. Rosengurtt says that it is common in fields in Uruguay, but Osorio calls it "rare" in that country; Arechavaleta found it "very abundant in campos" there. Osten avers that it is "everywhere common" in Buenos Aires, and Cabrera refers to it as "campestre frecuente". Balls found it "growing by roadsides and in fields in parched grass and thin turf in rather heavy poor clayey soil in Tarija and among turf and herbage along railway embankments usually in somewhat sunny exposures in fairly dry stony loam in Jujuy. Eyerdam,

Beetle, & Grondona encountered it "in sandy soil on exposed coastal bluffs in reach of salt spray, full sun....corolla dark red, other plants have violet corolla; common associated with Oxalis, Hydrocotyle, Amaranthus, Lolium, Bromus, etc." What his violet-flowered plants were, I do not know. Ruíz Leal 16292 is said to have had purple flowers. Stearn reports the species as "not quite hardy out-of-doors" in England. Specimens have been misidentified and distributed in herbaria under the names V. erinoides Lam., V. hortensis L. H. Bailey, V. marrubioides Cham., V. phlogiflora var. vulgaris Schau., V. platensis Spreng., V. scrobiculata Griseb., V. sororia D. Don, and V. teucrioides Gill.

On the other hand, the Pedersen 355, distributed as V. peruviana, seems to be var. glabriuscula Kuntze; Collector undesignated s.n. [June 30, 1891] is V. canadensis (L.) Britton; Paul 39, J. K. Small 8745, and Van Hermann 867 are xV. hybrida Voss; Dusén 13564, Hassler 12335, Morong 51, Edw. Palmer s.n. [Capt. Page Exped. 1854] & s.n. [Pilcomayo, Capt. Page La Plata Exped.], Rocha 3693, and Venturi 33, 378, 378b [except the Britton Herbarium specimen, which is Phyla nodiflora var. reptans (H.B.K.) Moldenke], 5270, & 7360 are V. incisa Hook., as is also Herter 1057 [Herb. Herter 82941] distributed as "V. chamaedrifolia var. nov."; and Schwacke II.262 is V. tenera Spreng.

For a time, some twenty years ago, I considered V. scrobiculata as the proper name for plants now regarded as V. incisa and V. peruviana. This accounts for my misidentification of the splendid color plate of V. peruviana in Descole's Icones (1944). The Archer 4666, Boffa 1090, R. Fischer s.n. [Herb. Inst. Bot. S. Paulo 3679], Herter 84432, F. C. Hoehne s.n. [Herb. Inst. Bot. S. Paulo 8712], Job 1071, Jörgensen 3772, Mexia 7832, T. Meyer 2673, Rodrigo 705 & 855, A. G. Schulz 1475, and Venturi 2433, all previously determined as V. peruviana, are actually V. incisa Hook., while Cabrera 1584 [Herb. Inst. Bot. S. Paulo 24564] is V. phlogiflora Cham., Hassler 11052 is V. platensis Spreng., and Herb. Comm. Geogr. & Geol. 2958 is V. scrobiculata Griseb.

It is worthy of note here that V. chamaedrifolia Briq. is actually V. humifusa Cham.; V. chamaedrifolia var. hybrida Mill. is xV. hybrida Voss.; V. chamaedrifolia var. melindroides Benth. is V. marrubioides Cham.; V. chamaedrifolia x erinoides Osten is V. dissecta Willd.; V. chamaedryfolia f. foliosae Chod. is V. platensis Spreng.; V. chamaedryfolia f. strigosa Chod. is V. platensis var. stenodes Briq,; V. chamaedryfolia var. bipinnatisecta Kuntze is V. calliantha Briq.; V. chamaedryfolia var. melindres f. siccanea lus. roseiflora Osten is V. peruviana f. rosea Moldenke; V. chamaedryfolia var. rosea Osten is V. peruviana f, rosea Moldenke; V. chamaedryfolia var. subbipinnatisecta Kuntze is V. peruviana

var. subbipinnatisecta Kuntze; V. chamaedryfolia α melindres rosiflora Osten is V. peruviana f. rosea Moldenke; V. chamaedryfolia α melindres f. siccanea Osten is V. incisa Hook.; V. chamaedryfolia hybrida Osten is xV. hybrida Voss; V. chamaedryfolia x erinoides Osten is V. dissecta Willd.; V. chamaedryfolia x tenuisecta Briq. is V. calliantha Briq.; V. melindres latifolia Bohn is xV. hybrida Voss; V. melindres var. latifolia Bohn is xV. hybrida Voss; V. melindres x tenera Osten is xV. uruguayensis Moldenke; V. melindres x teucrioides Osten is xV. osteni Moldenke; V. melindroides f. briquetiana Osten is V. incisa Hook.; V. melindroides f. silvatica Osten is V. incisa Hook.; V. melindroides x tenuisecta Osten is V. calliantha Briq.; V. sanguinea Mart. is Stachytarpheta sanguinea Mart.; and V. veronicaefolia H.B.K. is V. carolina L.

The following hybrids of V. peruviana are known: with V. megapotamica Spreng. (= xV. schnackii Moldenke), with V. perakii (Covas & Schnack) Moldenke (= xV. tentamenta Moldenke), with V. phlogiflora Cham. (= xV. corrupta Moldenke), with V. platensis Spreng. (= xV. osteni Moldenke), with V. tenera Spreng. (= xV. uruguayensis Moldenke), and with V. tenuisecta Briq. (= xV. solbrigii Moldenke).

Osten 3523 is a mixture with V. pulchella Sweet. Archer 4625 looks very much like V. incisa Hook., while E. Fielding s.n. [Cordova] is so densely hairy throughout as to suggest hybridity with V. incisa.

Numerous bibliographic errors occur in the literature of this plant. Erinus peruvianus is often cited to "L. Sp. pl. 879", but the correct citation is L., Sp. Pl., ed. 1, 1: 630 (1753). Larrañaga, Atlas Bot. pl. 42 (1927) is sometimes cited as "Escritos D. A. Larrañ. 2: pl. 41. 1923". Feuillée's Journ. Obs. Phys. Côtes Orient. [3]: 36--37, pl. 25, fig. 3 is often referred to as "Few. Peruv. 3. p. 25. f. 3" or "Feuill. Hist. Peruv. 3. p. 25. f. 3" or as "Feuill. Peruv. 3, 25. f. 3". Verbena melissoides Sweet is often cited to Sweet, Brit. Flow. Gard., ser. 2, 1: pl. 9 (1829), but the name does not occur there! Hooker & Jackson (1895) cite it to Steud., Nom. Bot., ed. 2, 2: 750 (1841), but actually it seems to appear first in Cham., Linnaea 7: 270 (1832).

Augusto (1946) cites Sellow s.n. from southern Brazil, Bade s.n. and Isabelle s.n. from Uruguay, Lindman s.n., Kadletz s.n., Emrich s.n., Augusto s.n., and Edésio s.n. from Rio Grande do Sul. Cabrera cites his nos. 7110, 7968, and B.5151; Ragonese cites his R.2042, 2397, 2606, 2845, & 3274 from Santa Fé, Argentina; Rosengurtt cites his PE.1428 from Uruguay, and Maria (1962) cites his no. 179/4b from Cochabamba, Bolivia. These collections have not as yet been seen by me.

In all, 245 herbarium specimens and 16 mounted photographs and illustrations have been examined by me.

Citations: ILLINOIS: Kane Co.: W. Lloyd s.n. [1869] (Ur). PERU: Department undetermined: Haenke 1839 (N). BRAZIL: Rio Grande do Sul: Jürgens 190 (B, W--1482184); Luis 6 (Vi); Maria 6 (W--1953743); Rambo 46335 (Ml, N), 51348 (W--2102006); Reitz 4445 (Le); A. R. Schultz 464 (N); Sehnem 3882 (B), 7256 (B); Smith & Reitz 5831 (W--2120182); Stellfeld s.n. [R.20, no. 2; 28-9-56] (Sm); J. Vidal s.n. [Herb. Mus. Nac. Rio 46545] (N). Santa Catarina: Reitz C.882 (Rd), C.1281 (N); Smith & Reitz 5960 (W--2120183). State undetermined: Raben 523, in part (Br); Sellow 35 (N), 1516 (N), s.n. [Macbride photos 17407] (Kr--photo, N--photo, N--photo), s.n. [Macbride photos 34352] (Kr--photo, N--photo, Ug-photo), s.n. [Brasilia] (Br). BOLIVIA: Tarija: Balls 6088 (W--1777798); Cardenas 4939 (W--2103994). PARAGUAY: Hassler 2585 (V); Ponder s.n. [in or near Asuncion] (Je--7616); T. Rojas 3395 [Herb. Osten 17905] (N). URUGUAY: J. Anderson 35 (Bm); N. J. Andersson s.n. [Monte Video, 1852] (S); Apleri s.n. [S. Elena] (Bm); Archer 4454 (W--1705456); Arechavaleta 26 [setiembre 1877] (Ug, Ug), 26 [octubre 1887] (Ug); H. H. Bartlett 21096 (Mi), 21157 (Ca--772083, Ca--772324, Mi, W--1930207); Berro 2361 (N), 4749 (N); Castellanos s.n. [Herb. Inst. Miguel Lillo 11769] (N), s.n. [Herb. Inst. Miguel Lillo 15771] (N, N), s.n. [Herb. Inst. Miguel Lillo 15775] (N, N); Collector undesignated 95 (W--1742782), s.n. [Montevideo, Nov. 24, 1884] (Ug, Ug), s.n. (Ug); Commerson 72 [Herb. Jussieu 5141, in part; Macbride photos 39503, in part] (Kr--photo, N, N--photo), s.n. [Montevideo, Mai 1767] (B), s.n. [Monte Video] (N); Gallinal, Aragone, Bergalli, Campal, & Rosengurtt 1009 (N), PE.4800 (N); C. Gay s.n. [Montevideo] (N, N); Herter 19 [Herb. Herter 71313] (Ba, Ca--278422, I, S), 19a [Herb. Herter 32160] (B, N), 19b [Herb. Herter 71313] (N), s.n. [Herb. Osten 16986] (Ug), s.n. [Herb. Osten 18483] (Ug); Mrs. O. C. James s.n. [Colonia, Jan. 1901] (Du--149788); Legrand 251 (Ug), 568 (Ug), 3488 (Ug); A. Lutz 1654 (Lz); Miers 5 (Bm), 212 (Bm); Moldenke & Legrand 2790 (Ug); Moldenke & Moldenke 19693 (Es, Mg, Mr, N, No, Ot, S, S, Sm); Née 19 (Q), 117 (Q); Osorio 256 (Ug--13182), s.n. [Tranqueras, Rivera, Feb. 22, 1947] (Ug--14119); Osten 3177, in part (Ug), 3189 (Ug), 3224 (Ug), 3523, in part (Ug), 3523b (Ug), 3776 (Ug), 4195, in part (Ug, Ug), 5173 (Ug), 6387 (Ug, W--1159393), 7792 (Ug), 8711 (S, Ug); Rosa-Mato 193 (Ug--9813); Rosengurtt B.549 (N), B.749 (N), B.914 (N); Rosengurtt & Gallinal 5694 (Ug--14236, W--2121000); Safford s.n. [La Paz, Oct. 24, 1886] (W--922262, W--922263); A. Saint-Hilaire C[2]: 2069 bis (N), s.n. [Bresil? Montevideo?] (N). ARGENTINA: Buenos Aires: Alboff 3840 (N, S); Boffa 1 (S), 36 (N), 3112 (N); Cabrera

1477 (N, Sp--24914), 1790 (S), 3388 (N); Commerson 71 [Herb. Jussieu 5141, in part; Macbride photos 39503, in part] (Kr--photo, N--photo), s.n. [Buenos Ayres] (N); Dusén 6314 (N, S); Eyerdam, Beetle, & Grondona 23602 (Ca--623554); Floyer 35 (C); Goodspeed 23204 (Ca--636583); Gosselman s.n. [1 December 1836] (S); Mansel s.n. [Bahia Blanca, 1884] (Bm); Molfino s.n. [Sierra de la Ventana] (Sp--25789); Osten 2778 (Ug); Reutzell 1102 (Ca--3313), 4102 (W--1858378); Rodrigo 2340 (N); Ruíz Huidobro 1307 (S); A. G. Schulz 5673 (Sz); Sparre 188 (S); J. Tweedie s.n. [13 Apr.] (Bm), s.n. [Banda Oriental] (Bm). Catamarca: H. H. Bartlett 19593 (Mi); Castellanos s.n. [Herb. Mus. Argent. Cienc. Nat. 33875] (N); Jörgensen 1028 [Herb. Inst. Miguel Lillo 31350] (Ca--202219, N, W--921716); E. S. Riggs 102 (W--1495164); Wall & Sparre s.n. [La Negrillo, 28/11/46] (Ew, Ew). Chaco: T. Meyer 2943 (N); A. G. Schulz 1466 (N), 1476 (N), 1476a (N), 1479 (N). Córdoba: H. H. Bartlett 20194 (Mi); Bruch 8520 (N); Castellanos s.n. [Herb. Mus. Argent. Cienc. Nat. 31194] (N); G. Dawson 133 (N); E. Fielding s. n. [Cordova] (Bm); Kuntze s.n. [Cordoba, XII.1891] (N); Lorentz B (Vt); Lossen 10 (Ba, Um--30); Maldonado Bustos 98 (N); O'Donell & Rodriguez 524 (Ut--115406b); Pierotti s.n. [27/I/94] (W--1931711); Rodrigo 246 (N); Rose & Russell 21052 (N, W--762894); Troncoso 318 (N); J. J. Valencia s.n. [Herb. Inst. Bot. Darwinion 16065] (N, N); Villafañe 538 (N); Wall & Sparre s.n. [La Falda, 15/12/46] (Ew), s.n. [El Quadrado, 16/12/46] (Ew, Ew). Corrientes: Pedersen 80 (W--2122215). Entre Ríos: Burkart 17961 (N); Schwacke s.n. [Concepcion do Uruguai, IV/1880] (Ja--46582). Jujuy: Balls 5947 (W--1777765); Ruíz Leal 14367 (Rl), 14382 (Rl). La Pampa: Burkart 9944 (Ca--3308, W--1858303); Fortuna 21 (Ca). La Rioja: T. Meyer 3927 (W--1909104); Ruíz Leal 16292 (Rl). Misiones: Archer 4625 (N, W--1705479); G. J. Schwarz 504 (W--1933972), 2861 (Gg--352676, N). San Juan: Miers s.n. [Barranquitos] (Bm), s.n. [Zanjon] (Bm). San Luis: Miers s.n. [San Luiz] (Bm); F. A. Roig 1330 [Herb. Ruíz Leal 19075] (Z); Varela 614 (S). Santa Fé: R. Alvarez 838 (N); Barrionuevo s.n. [Albarello, 4-II-47] (N); Feddersen s.n. [Aurelia, near S. Fé] (Cp); Greco s.n. [Albarello, 4-II-1947] (N); Job 569 (N), 803 (N); Ruíz Huidobro 3258 (N); Ruíz Leal 14246 (Rl). Santiago del Estero: Maldonado 312 (N). Tucumán: Moldenke & Moldenke 19728 (N, N); Olea 278 (Ca--165037); C. C. Olrog s.n. [P. Olrog 96] (Og); Peirano s.n. [Herb. Inst. Miguel Lillo 32193] (Mv); R. Rocha 3693 (Au--122406, Mv); Ruíz Leal 12245 (Rl); Sleumer s.n. [Tafí del Valle, 24.1.50] (B); Wall & Sparre s. n. [San Javier, 20/11/46] (Ew), s.n. [Tafí del Valle, 10/12/46] (Ew). Province undetermined: Kuntze s.n. [Pampas Reise, Januar 1892] (N). CULTIVATED: Belgium: Lejeune s.n. (Br, Br, Br); M. Martens s.n. [h. b. Lov. 1833] (N). England: L. H. Bailey s.n.

[Kew, Aug. 8, 1919] (Ba); Nelmes 1073 (Ba); Stearn s.n. [Cambridge, 1930] (Ba). Germany: Herb. Prager 18644 (Gg--31451). Italy: Gresino s.n. [Varazza, 29.V.1938] (N); Herb. Harvey s.n. [hort. Bellovae, jun. 1842] (Du--166461), s.n. [h. R. P. 1843] (Du--166461), s.n. [hort. Aurelien 1843] (Du--166459). Maryland: L. P. McCann s.n. [H. N. Moldenke 10399] (N). New Jersey: Guyot s.n. (Pr). New York: Ahles s.n. [N. Y. Bot. Gard. Cult. Pl. 476/45] (N); McSweeney s.n. [N. Y. Bot. Gard. Cult. Pl. 274/34] (N); Moldenke & Moldenke 11885 (N); New York Bot. Gard. Cult. Pl. 9189 (N--photo); H. Schneider s.n. [N. Y. Bot. Gard. Cult. Pl. R.274/34] (Ba, N); A. Seaman s.n. [N. Y. Bot. Gard. Cult. Pl. 476/45] (N); M. Zimmerman 20 (Ba). Russia: Herb. Hort. Bot. Petrop. s.n. (W--71992). Scotland: Herb. Hort. Reg. Bot. Edinb. 349 (Ba). Switzerland: A. de Candolle s.n. [H. Genev.] (Lu); Herb. Meisner s.n. [cult. in Hort. Bot. Basil. 31 Jul. 1834] (M). Locality undetermined: Herb. Schwetzing s.n. (S). LOCALITY OF COLLECTION UNDETERMINED: Collector undesignated 35 (S), s.n. (Sg--16107); Herb. Mus. Nac. Rio ref. VII (Ja); Reinhardt s.n. [J. a Curral a El Rey., Sept. 1855] (Cp). MOUNTED ILLUSTRATIONS: Descole, Icon. pl. 165 (N); M. Roscoe, Fl. Illustr. Seasons pl. 31 (N); Sweet, Brit. Fl. Gard., ser. 2, 9: 74, no. 293 (N); color plate of Verbena chamaedrifolia (N); color plate of Verbena melindres (Scarlet Verbena) (N).

VERBENA PERUVIANA f. ALBA Moldenke, Phytologia 4: 451, nom. nud. (1953), 7: 258--259. 1960.

Bibliography: Moldenke, Phytologia 4: 451. 1953; Reitz, Sellowia 1: 57 & 134. 1959; Moldenke, Résumé 110 & 473. 1959; Moldenke, Phytologia 7: 258--259. 1960.

This form differs from the typical form of the species in having white corollas.

The type of the form was collected by my good friend, Padre Raulino Reitz (no. C.1280) in a cultivated field at Sambrio, at an altitude of 10 meters, Santa Catarina, Brazil, on October 9, 1945, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector describes the plant as "erva rastejante, flor branca". Common names recorded for it are "camaradinha", "formosa sem dote", and "jurupeba", names that are applied to almost all the other taxa of this genus in that area. The form is known thus far only from the type specimen.

Citations: BRAZIL: Santa Catarina: Reitz C.1280 (N--type).

VERBENA PERUVIANA var. GLABRIUSCULA Kuntze, Rev. Gen. Pl. 3 (2): 257. 1898.

Synonymy: Verbena splendens Hort. ex Moldenke, Résumé Suppl. 5: 8, in syn. 1962.

Bibliography: Kuntze, Rev. Gen. Pl. 3 (2): 257. 1898; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 106 & 199. 1949.